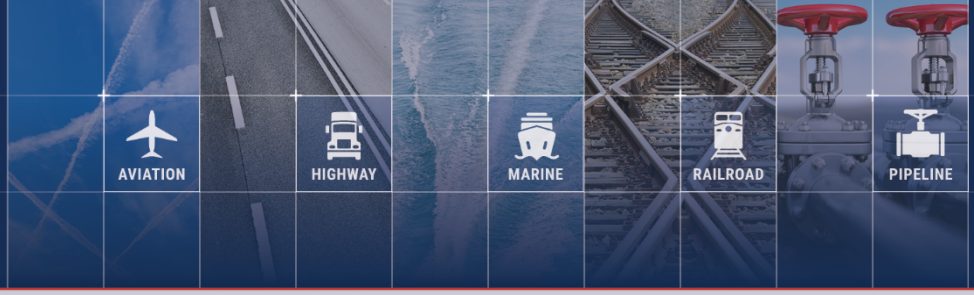

Aviation Investigation Final Report

Location:	JULIAN, California	**Accident Number:**	LAX96FA115
Date & Time:	February 19, 1996, 20:14 Local	**Registration:**	N738ED
Aircraft:	Cessna 172N	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	3 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The flight was operating in visual conditions on an instrument flight plan at night. The pilot informed ATC that he was having difficulty maintaining his assigned altitude in downdrafts as his course converged on the lee side of the mountain ridge line. As he approached the VORTAC, located on a peak on the ridge line, the downdraft intensity increased and he was unable to maintain the en route MEA and the aircraft descended into an undercast cloud layer. The pilot requested vectors out of the downdraft but the aircraft impacted the face of the ridge 300 feet below the crest. A pilot following in another aircraft reported that conditions were clear and visibility unrestricted over lower terrain away from the ridge.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's delay in requesting assistance to avoid high terrain. Factors were: the downdrafts, mountainous terrain, and the pilot's improper in-flight planning.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: CRUISE - NORMAL

Findings
1. (F) WEATHER CONDITION - DOWNDRAFT
2. (F) TERRAIN CONDITION - MOUNTAINOUS/HILLY

3. (F) IN-FLIGHT PLANNING/DECISION - IMPROPER - PILOT IN COMMAND
4. (C) REMEDIAL ACTION - DELAYED - PILOT IN COMMAND

Factual Information

HISTORY OF FLIGHT

On February 19,1996, at 2014 hours Pacific standard time, a Cessna 172N, N738ED, impacted terrain about 300 feet below an east facing ridge line located 2 miles south of the Julian VORTAC at Julian, California. The aircraft was destroyed and the ATP licensed pilot and two passengers were fatally injured. The 14 CFR Part 91 flight departed Imperial County Airport at El Centro, California, about 1840 and was destined for Palomar Airport at Carlsbad, California. The aircraft was on an IFR flight plan and a mixture of visual and instrument meteorological conditions prevailed along the route. The aircraft was operating in visual conditions above clouds prior to the accident, however, near zero visibility conditions existed at the accident site when rescuers reached the area about 2300. The wreckage was located in dense fog the following morning.

The flight originated at Palomar Airport earlier in the evening for the purpose of assisting another pilot, who was in El Centro, in returning to Palomar. The pilot in El Centro, a private pilot without an instrument rating, had rented another Cessna 172 from the operator earlier in the day. He was uncertain about the weather conditions and he called the operator and requested that they send a flight instructor to accompany him on the return to Palomar. Two flight instructors left Carlsbad in the accident aircraft about 1730. There was no record of either flight instructor receiving a weather briefing before departing.

In El Centro the two flight instructors split the renter pilot's party for the return to Carlsbad in the two aircraft. One flight instructor and the renter pilot's two passengers planned to return in the accident aircraft. The second flight instructor and the private pilot returned in the Cessna 172 the private pilot had rented. While on the ground at El Centro the second flight instructor filed return IFR flight plans for both aircraft along the same route the two instructors had just flown over: Imperial, V66, KUMBA intersection, V458 (via Julian) Oceanside, to Palomar. The second flight instructor told the NTSB investigator that he did not get a weather briefing because they had just flown the route and knew the weather first-hand.

The pilot of the accident aircraft departed El Centro about 1840 and called Los Angeles ARTCC when airborne to receive his instrument clearance. At 1906, the flight was radar identified and cleared to Palomar airport along the filed route and assigned 8,000 feet.

At 1914, Los Angeles Center cleared the aircraft to climb and maintain 9,000 feet, and the pilot replied that he was unable. He was recleared to maintain 8,000 feet. Later, at 1929, the pilot did report level at 9,000 feet; however, at 1940, the pilot reported he was unable to maintain 9,000 feet and was descending through 8,500 feet. Three minutes later, the pilot reported he was unable to maintain 8,000 feet, and at 1946 advised that he was at 7,000. The Center

issued a low altitude alert and instructed the aircraft to maintain 8,000 feet as soon as possible. At 1956, the flight was handed off to SOCAL Approach Control.

At 1956, the flight checked in with SOCAL Approach at 7,500 feet and reported having difficulty maintaining altitude, but that they were still in VFR conditions. At 1959, the pilot reported level at 8,000 feet, but at 2007 reported entering another downdraft in which the aircraft descended until radar contact was lost at 2015. At 2011, while at 6,800 feet, the pilot radioed "request vectors out of here sir" and was subsequently issued a series of westerly headings by the approach controller. The last reported altitude was 5,800 feet at 2013, which the pilot said he was unable to maintain and that he no longer had visual contact with the ground.

A plot of Los Angeles ARTCC NTAP data (attached) shows the aircraft proceeding northwest bound at approximately 8,000 feet at 2004 while 6 miles southeast of Julian VORTAC on V458. In the ensuing 10 minutes the aircraft traveled about 6 miles and descended to 5,600 feet on the lee side of the mountain ridge. Radar contact was lost approximately where the wreckage was located.

The second pilot/flight instructor told the NTSB investigator that he and the private pilot took off about 10 minutes behind the accident aircraft. When approximately 20 miles southeast of Julian VORTAC at 8,000 feet, his flight encountered a downdraft to 7,000 feet, after which the flight was again able to climb to 8,000 feet. Because of the downdraft and because he heard the preceding aircraft on the radio having difficulty maintaining 8,000 feet in downdrafts, the second pilot elected to continue climbing to a higher altitude. He eventually crossed Julian VORTAC at about 10,000 feet and ultimately reached 11,500 feet. At one point, while climbing through 9,000 or 10,000 feet at an indicated airspeed of 72 knots, ATC controllers reported his ground speed was 30 knots.

The private pilot in the same aircraft removed his IFR hood when he became concerned about the safety of the aircraft ahead. He heard SOCAL TRACON transmit "Try to maintain 5,800 feet" and then he heard the last transmission from the accident aircraft which was to the effect that "I'm having a major.." They tried to call the accident aircraft unsuccessfully and then tuned to 121.5 MHz on their second radio and received an ELT signal. He then proceeded to Palomar and made a VFR landing.

The pilot reported that as they crossed Julian they were in visual conditions and that Palomar, Ramona, and Borrego Springs airports were visible. Stars were visible above them and there was some illumination in the night sky. Some "ground fog" was visible in the valleys below.

A commercial pilot/CFI who participated in the ground search for the aircraft the evening of the accident told the NTSB investigator that, using a portable ELT receiver, he got close enough to the accident site that night to smell fuel from the aircraft, but could not locate it due to dense fog. He also reported observing standing lenticulars of altocumulus in proximity of Julian the next morning when the aircraft was located.

DAMAGE TO AIRCRAFT

The aircraft wreckage was recovered and was examined on March 13, 1996, at Ramona Aircraft Salvage, Ramona, California, by the NTSB and parties to the investigation. A report of the examination is attached. No aircraft discrepancies were reported.

PERSONNEL INFORMATION

According to his employer, Four Winds Aviation Services, Carlsbad, he had accumulated approximately 4,000 total flying hours and was their Assistant Chief Flight Instructor.

On the day of the accident the pilot had reported for work at 0800 and gave 5.1 hours of flight instruction. His last student finished at 1630 and was available to assist in returning the renter pilot from El Centro.

The other flight instructor who flew from Carlsbad to El Centro with the pilot reported that he was in good spirits, did not exhibit any reservations about making the trip, and appeared adequately rested.

AIRCRAFT INFORMATION

At the time of the accident the aircraft had acquired total flying time of 2,805 hours and had flown 17 hours since the last scheduled maintenance, which was a 100-hour inspection. According to the operator the aircraft was maintained and equipped for day and night, VFR and IFR operations, and on the day of the accident there were no deferred maintenance items (squawks) on the aircraft.

WRECKAGE AND IMPACT INFORMATION

The aircraft impacted terrain 2 miles south of the Julian VORTAC at latitude 33 degrees, 07.4 minutes north and longitude 116 degrees, 34.5 minutes west. The accident site was on the east side of a mountain ridge line extending north and south. The aircraft was found about 300 feet below the ridge line at an altitude of 5,400 feet heading 230 degrees. The slope of the terrain at the site is about 45 degrees.

All of the aircraft was present at the accident site. A 50-foot-tall pine tree, located about 30 feet behind the wreckage, had been sheared off approximately 10 feet from the top of the tree where it was about 6 inches diameter. The nose of the aircraft back to the wing leading edge exhibited crushing damage relative to the mountain slope. The left wing leading edge, 4 feet inboard of the tip, was dented back past the spar where pieces of tree debris were found. The remaining span of both wing leading edges exhibited uniform crushing along their entire length. Aft of the cabin door posts the fuselage exhibited compression damage in the floor and a compression buckle in the fuselage behind the baggage compartment. The propeller exhibited torsional damage to both blades.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed by the San Diego County Sheriff/Coroner and toxicological tests were performed by the FAA Civil Aeromedical Institute. The drug trimethoprim was detected in the pilot's blood and urine.

ADDITIONAL INFORMATION

The aircraft wreckage was released to Citrus Investigations representative for the insurance company/owner on May 8, 1996.

Additional persons participating in the aircraft examination at Ramona Aircraft Salvage on March 13, 1996 were: Mr. Abdon D. Llorente, NTSB; Mr. Mark W. Platt, Textron Lycoming; and Mr. William B. Welch, Cessna Aircraft Company.

Pilot Information

Certificate:	Airline transport	**Age:**	39,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	Yes
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	June 1, 1995
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	4000 hours (Total, all aircraft), 1500 hours (Total, this make and model), 75 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N738ED
Model/Series:	172N 172N	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal; Utility	**Serial Number:**	17269912
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	February 10, 1996 100 hour	**Certified Max Gross Wt.:**	2300 lbs
Time Since Last Inspection:	17 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2805 Hrs	**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, aided in locating accident	**Engine Model/Series:**	O-320-H2AD
Registered Owner:	KIETH RODENBERGER	**Rated Power:**	160 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:	FOUR WINDS AVIATION SERVICES	**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Night/dark
Observation Facility, Elevation:	NKX ,477 ft msl	**Distance from Accident Site:**	37 Nautical Miles
Observation Time:	20:00 Local	**Direction from Accident Site:**	225°
Lowest Cloud Condition:	Unknown	**Visibility**	7 miles
Lowest Ceiling:	Broken / 10000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	/ None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	0°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	15°C / 14°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	EL CENTRO (IPL)	**Type of Flight Plan Filed:**	IFR
Destination:	CARLSBAD (CRQ)	**Type of Clearance:**	IFR
Departure Time:	19:40 Local	**Type of Airspace:**	Class E

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	
Runway Length/Width:		**VFR Approach/Landing:**	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	2 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 Fatal	**Latitude, Longitude:**	33.020793,-116.489639(est)

Administrative Information

Investigator In Charge (IIC):	Parker, Richard
Additional Participating Persons:	JEFFREY M REYNOLDS; SAN DIEGO , CA EDWARD ROGALSKI; WILLIAMSPORT , PA FREDERICK LEPER; WICHITA , KS CHARLES R MOTE; SAN DIEGO , CA
Original Publish Date:	November 25, 1996
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=29261